

510015-261.TXT



#6.

SEQUENCE LISTING

<110> De Robertis, Edward M.  
Bouwmeester, Tewis

<120> Endoderm, Cardiac and Neural Inducing  
Factors

<130> 510015-261

<140> US 09/903,323

<141> 2001-07-11

<150> US 60/020,150

<151> 1996-06-20

<160> 10

<170> FastSEQ for Windows Version 3.0

<210> 1

<211> 270

<212> PRT

<213> Xenopus

<400> 1

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Ser	Leu	Asn	Ser	Arg	Gly	Tyr	Phe	Arg	Lys	Glu	Arg	Gly	Ala	Arg	Arg
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Ser	Lys	Ile	Leu	Leu	Val	Asn	Thr	Lys	Gly	Leu	Asp	Glu	Pro	His	Ile
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Gly	His	Gly	Asp	Phe	Gly	Leu	Val	Ala	Glu	Leu	Phe	Asp	Ser	Thr	Arg
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Thr	His	Thr	Asn	Arg	Lys	Glu	Pro	Asp	Met	Asn	Lys	Val	Lys	Leu	Phe
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Ser	Thr	Val	Ala	His	Gly	Asn	Lys	Ser	Ala	Arg	Arg	Lys	Ala	Tyr	Asn
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Gly	Ser	Arg	Arg	Asn	Ile	Phe	Ser	Arg	Arg	Ser	Phe	Asp	Lys	Arg	Asn
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Thr	Glu	Val	Thr	Glu	Lys	Pro	Gly	Ala	Lys	Met	Phe	Trp	Asn	Asn	Phe
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Leu	Val	Lys	Met	Asn	Gly	Ala	Pro	Gln	Asn	Thr	Ser	His	Gly	Ser	Lys
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Ala	Gln	Glu	Ile	Met	Lys	Glu	Ala	Cys	Lys	Thr	Leu	Pro	Phe	Thr	Gln
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      180      185      190
Cys Phe Gly Lys Cys Ile Ser Leu His Val Pro Asn Gln Gln Asp Arg
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Arg Asn Thr Cys Ser His Cys Leu Pro Ser Lys Phe Thr Leu Asn His
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Leu Thr Leu Asn Cys Thr Gly Ser Lys Asn Val Val Lys Val Val Met
      225      230      235      240
Met Val Glu Glu Cys Thr Cys Glu Ala His Lys Ser Asn Phe His Gln
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Thr Ala Gln Phe Asn Met Asp Thr Ser Thr Thr Leu His His
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<210> 3
<211> 318
<212> PRT
<213> Xenopus frazzled

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## 510015-261.TXT

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 Pro Val Arg Ile Pro Met Cys Lys Ser Met Pro Trp Asn Met Thr Lys  
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 Ile Glu Gln Phe Glu Gly Leu Leu Thr Thr Glu Cys Ser Gln Asp Leu  
 65 70 75 80  
 Leu Phe Phe Leu Cys Ala Met Tyr Ala Pro Ile Cys Thr Ile Asp Phe  
 85 90 95  
 Gln His Glu Pro Ile Lys Pro Cys Lys Ser Val Cys Glu Arg Ala Arg  
 100 105 110  
 Ala Gly Cys Glu Pro Ile Leu Ile Lys Tyr Arg His Thr Trp Pro Glu  
 115 120 125  
 Ser Leu Ala Cys Glu Glu Leu Pro Val Tyr Asp Arg Gly Val Cys Ile  
 130 135 140  
 Ser Pro Glu Ala Ile Val Thr Val Glu Gln Gly Thr Asp Ser Met Pro  
 145 150 155 160  
 Asp Phe Ser Met Asp Ser Asn Asn Gly Asn Cys Gly Ser Gly Arg Glu  
 165 170 175  
 His Cys Lys Cys Lys Pro Met Lys Ala Thr Gln Lys Thr Tyr Leu Lys  
 180 185 190  
 Asn Asn Tyr Asn Tyr Val Ile Arg Ala Lys Val Lys Glu Val Lys Val  
 195 200 205  
 Lys Cys His Asp Ala Thr Ala Ile Val Glu Val Lys Glu Ile Leu Lys  
 210 215 220  
 Ser Ser Leu Val Asn Ile Pro Lys Asp Thr Val Thr Leu Tyr Thr Asn  
 225 230 235 240  
 Ser Gly Cys Leu Cys Pro Gln Leu Val Ala Asn Glu Glu Tyr Ile Ile  
 245 250 255  
 Met Gly Tyr Glu Asp Lys Glu Arg Thr Arg Leu Leu Leu Val Glu Gly  
 260 265 270  
 Ser Leu Ala Glu Lys Trp Arg Asp Arg Leu Ala Lys Lys Val Lys Arg  
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 Trp Asp Gln Lys Leu Arg Arg Pro Arg Lys Ser Lys Asp Pro Val Ala  
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 <212> DNA  
 <213> Xenopus frazzled

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 acacatacag gttgggcaga ataacaatgt ctggaacaag gaaagtggac tcattactgc 360  
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## 510015-261.TXT

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aaaaaaaaa aaaaaa 1875

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 <212> PRT  
 <213> Xenopus

<400> 5

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			20					25					30		
Glu	Pro	Pro	Gly	Thr	Val	Ile	Ala	Val	Leu	Ser	Gln	His	Ser	Ile	Phe
		35					40					45			
Asn	Thr	Thr	Asp	Ile	Pro	Ala	Thr	Asn	Phe	Arg	Leu	Met	Lys	Gln	Phe
		50				55				60					
Asn	Asn	Ser	Leu	Ile	Gly	Val	Arg	Glu	Ser	Asp	Gly	Gln	Leu	Ser	Ile
65					70					75				80	
Met	Glu	Arg	Ile	Asp	Arg	Glu	Gln	Ile	Cys	Arg	Gln	Ser	Leu	His	Cys
				85					90					95	
Asn	Leu	Ala	Leu	Asp	Val	Val	Ser	Phe	Ser	Lys	Gly	His	Phe	Lys	Leu
		100						105					110		
Leu	Asn	Val	Lys	Val	Glu	Val	Arg	Asp	Ile	Asn	Asp	His	Ser	Pro	His
		115					120					125			
Phe	Pro	Ser	Glu	Ile	Met	His	Val	Glu	Val	Ser	Glu	Ser	Ser	Ser	Val
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Gly	Thr	Arg	Ile	Pro	Leu	Glu	Ile	Ala	Ile	Asp	Glu	Asp	Val	Gly	Ser

## 510015-261.TXT

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 Asp Val Leu Thr Arg Ala Asp Gly Val Lys Tyr Ala Asp Leu Val Leu  
 180 185 190  
 Met Arg Glu Leu Asp Arg Glu Ile Gln Pro Thr Tyr Ile Met Glu Leu  
 195 200 205  
 Leu Ala Met Asp Gly Gly Val Pro Ser Leu Ser Gly Thr Ala Val Val  
 210 215 220  
 Asn Ile Arg Val Leu Asp Phe Asn Asp Asn Ser Pro Val Phe Glu Arg  
 225 230 235 240  
 Ser Thr Ile Ala Val Asp Leu Val Glu Asp Ala Pro Leu Gly Tyr Leu  
 245 250 255  
 Leu Leu Glu Leu His Ala Thr Asp Asp Asp Glu Gly Val Asn Gly Glu  
 260 265 270  
 Ile Val Tyr Gly Phe Ser Thr Leu Ala Ser Gln Glu Val Arg Gln Leu  
 275 280 285  
 Phe Lys Ile Asn Ser Arg Thr Gly Ser Val Thr Leu Glu Gly Gln Val  
 290 295 300  
 Asp Phe Glu Thr Lys Gln Thr Tyr Glu Phe Glu Val Gln Ala Gln Asp  
 305 310 315 320  
 Leu Gly Pro Asn Pro Leu Thr Ala Thr Cys Lys Val Thr Val His Ile  
 325 330 335  
 Leu Asp Val Asn Asp Asn Thr Pro Ala Ile Thr Ile Thr Pro Leu Thr  
 340 345 350  
 Thr Val Asn Ala Gly Val Ala Tyr Ile Pro Glu Thr Ala Thr Lys Glu  
 355 360 365  
 Asn Phe Ile Ala Leu Ile Ser Thr Thr Asp Arg Ala Ser Gly Ser Asn  
 370 375 380  
 Gly Gln Val Arg Cys Thr Leu Tyr Gly His Glu His Phe Lys Leu Gln  
 385 390 395 400  
 Gln Ala Tyr Glu Asp Ser Tyr Met Ile Val Thr Thr Ser Thr Leu Asp  
 405 410 415  
 Arg Glu Asn Ile Ala Ala Tyr Ser Leu Thr Val Val Ala Glu Asp Leu  
 420 425 430  


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 Gly Phe Pro Ser Leu Lys Thr Lys Tyr Tyr Thr Val Lys Val Ser  
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 Asp Glu Asn Asp Asn Ala Pro Val Phe Ser Lys Pro Gln Tyr Glu Ala  
 450 455 460  
 Ser Ile Leu Glu Asn Asn Ala Pro Gly Ser Tyr Ile Thr Thr Val Ile  
 465 470 475 480  
 Ala Arg Asp Ser Asp Ser Asp Gln Asn Gly Lys Val Asn Tyr Arg Leu  
 485 490 495  
 Val Asp Ala Lys Val Met Gly Gln Ser Leu Thr Thr Phe Val Ser Leu  
 500 505 510  
 Asp Ala Asp Ser Gly Val Leu Arg Ala Val Arg Ser Leu Asp Tyr Glu  
 515 520 525  
 Lys Leu Lys Gln Leu Asp Phe Glu Ile Glu Ala Ala Asp Asn Gly Ile  
 530 535 540  
 Pro Gln Leu Ser Thr Arg Val Gln Leu Asn Leu Arg Ile Val Asp Gln  
 545 550 555 560

## 510015-261.TXT

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 Gly Glu Val Leu Leu Pro Ile Ser Ala Pro Gln Asn Tyr Leu Val Phe  
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 Gln Leu Lys Ala Glu Asp Ser Asp Glu Gly His Asn Ser Gln Leu Phe  
 595 600 605  
 Tyr Thr Ile Leu Arg Asp Pro Ser Arg Leu Phe Ala Ile Asn Lys Glu  
 610 615 620  
 Ser Gly Glu Val Phe Leu Lys Lys Gln Leu Asn Ser Asp His Ser Glu  
 625 630 635 640  
 Asp Leu Ser Ile Val Val Ala Val Tyr Asp Leu Gly Arg Pro Ser Leu  
 645 650 655  
 Ser Thr Asn Ala Thr Val Lys Phe Ile Leu Thr Asp Ser Phe Pro Ser  
 660 665 670  
 Asn Val Glu Val Val Ile Leu Gln Pro Ser Ala Glu Glu Gln His Gln  
 675 680 685  
 Ile Asp Met Ser Ile Ile Phe Ile Ala Val Leu Ala Gly Gly Cys Ala  
 690 695 700  
 Leu Leu Leu Leu Ala Ile Phe Phe Val Ala Cys Thr Cys Lys Lys Lys  
 705 710 715 720  
 Ala Gly Glu Phe Lys Gln Val Pro Glu Gln His Gly Thr Cys Asn Glu  
 725 730 735  
 Glu Arg Leu Leu Ser Thr Pro Ser Pro Gln Ser Val Ser Ser Leu  
 740 745 750  
 Ser Gln Ser Glu Ser Cys Gln Leu Ser Ile Asn Thr Glu Ser Glu Asn  
 755 760 765  
 Cys Ser Val Ser Ser Asn Gln Glu Gln His Gln Gln Thr Gly Ile Lys  
 770 775 780  
 His Ser Ile Ser Val Pro Ser Tyr His Thr Ser Gly Trp His Leu Asp  
 785 790 795 800  
 Asn Cys Ala Met Ser Ile Ser Gly His Ser His Met Gly His Ile Ser  
 805 810 815  
 Thr Lys Val Gln Trp Ala Lys Glu Ile Val Thr Ser Met Thr Val Thr  
 820 825 830  
 Leu Ile Leu Val Glu Asn Gln Lys Arg Arg Ala Leu Ser Ser Gln Cys  
 835 840 845

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Arg His Lys Pro Val Leu Asn Thr Gln Met Asn Gln Gln Gly Ser Asp  
 850 855 860  
 Met Pro Ile Thr Ile Ser Ala Thr Glu Ser Thr Arg Val Gln Lys Met  
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## 510015-261.TXT

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&lt;210&gt; 7

&lt;211&gt; 323

&lt;212&gt; PRT

&lt;213&gt; Mouse FRZB-1

&lt;400&gt; 7

*C1 Cont*

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20          25          30
Ala Ala Cys Glu Pro Val Arg Ile Pro Leu Cys Lys Ser Leu Pro Trp
35          40          45
Asn Met Thr Lys Met Pro Asn His Leu His His Ser Thr Gln Ala Asn
50          55          60
Ala Ile Leu Ala Met Glu Gln Phe Glu Gly Leu Leu Gly Thr His Cys
65          70          75          80
Ser Pro Asp Leu Leu Phe Phe Leu Cys Ala Met Tyr Ala Pro Ile Cys
85          90          95
Thr Ile Asp Phe Gln His Glu Pro Ile Lys Pro Cys Lys Ser Val Cys
100         105         110
Glu Arg Ala Arg Gln Gly Cys Glu Pro Ile Leu Ile Lys Tyr Arg His
115         120         125
Ser Trp Pro Glu Ser Leu Ala Cys Asp Glu Leu Pro Val Tyr Asp Arg
130         135         140
Gly Val Cys Ile Ser Pro Glu Ala Ile Val Thr Ala Asp Gly Ala Asp
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Arg Cys Lys Cys Lys Pro Val Arg Ala Thr Gln Lys Thr Tyr Phe Arg
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Asn Asn Tyr Asn Tyr Val Ile Arg Ala Lys Val Lys Glu Val Lys Met
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Lys Cys His Asp Val Thr Ala Val Val Glu Val Lys Glu Ile Leu Lys
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